

# **SECURITY DEVICE OF POWER RECEPTACLE**

## **BACKGROUND OF THE INVENTION**

### **(a) Field of the Invention**

The present invention relates to security devices, and  
5 particularly to a security device of a power receptacle applied to  
slots of a wall receptacle or an extension line receptacle.  
Normally, the present invention seals the slots of a slot cover for  
preventing the intrusion of undesired objects. Furthermore, a  
plug can be pushed into the slot for power conduction.

### **10 (b) Description of the Prior Art:**

Conventionally, the slots of a receptacle are aligned to the  
conductive sheets in the receptacle. Thereby, plugs can be  
inserted into the receptacle rapidly and conveniently. However,  
this conventional structure easily induces accidents of electric  
15 shocks. This is because in general, fixed-type receptacles are  
placed about one foot away from the ground floor and the plugs  
of the extension lines are placed on the ground randomly, it is very  
possible that children inserts objects, such as screws, nails, or  
tools, into the slots of the receptacles, so as to induce electric  
20 shock. Moreover, since the slots are conductive to the conductive  
sheets, dusts or insects will enter into the slots so as to affect the  
quality of the receptacle, even the conductive sheets will oxidize  
or destroy. Thereby, there is an eager demand for novel security  
devices used in power receptacles which can improve the prior art  
25 defects.

## SUMMARY OF THE INVENTION

Accordingly, the primary object of the present invention is to provide a security device of a power receptacle which comprises a slot cover, a protection cover and a plurality of elastic elements.

5 The slot cover is a cover installed on a receptacle. A surface of the slot cover is formed with at least one power slot set. A surface of the power slot set has at least two recesses penetrating to an interior of the receptacle. At least one recess in an inner surface of the slot cover is installed with a positioning block at a lateral

10 side thereof. A protection cover serves for isolating the sheets of slots of the slot cover. A surface thereof is installed with a plurality of via holes corresponding to the slots. An inner surface thereof is installed with a plurality of slots corresponding to a plurality of hooking sheets corresponding to the recesses of the

15 protection cover. At least one hooking sheet is installed with the fixing block at a lateral side thereof. A plurality of elastic elements causing that the protection cover to isolate the elements of the slots. Thereby, the hooking sheets at the inner surface of the protection cover are inserted into the recesses of the slot cover.

20 The recesses of the slot cover can not be guided to move linearly. The elastic elements are installed between the positioning blocks of the slot cover and the fixing blocks of the hooking sheets. The elastic elements resist against the protection cover. As a result, the protection cover will seal the slots; and moreover, after

25 moving the protection cover, the via holes of the protection cover will align to the slots of the slot cover.

The various objects and advantages of the present invention will be more readily understood from the following detailed description when read in conjunction with the appended drawing.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

5        Fig. 1 is a schematic perspective view showing that the present invention is applied to a wall receptacle.

      Fig. 2 is a schematic perspective view showing that the present invention is applied to an extension line receptacle.

      Fig. 3 is an exploded rear view of the present invention.

10       Fig. 4 is an assembled rear view of the present invention.

      Fig. 5 is a rear view showing that the protection cover of the present invention cover upon the receptacle.

      Fig. 6 is a rear view showing that the protection cover moves linearly.

15       Fig. 7 is a schematic view showing the protection cover is engaged to the slot cover according to the present invention.

      Fig. 8 is a schematic view showing the operation of the plug according to the present invention.

20       Fig. 9 is another schematic view showing the operation of the plug according to the present invention.

## **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

      Referring to Fig. 4, the security device of a power receptacle of the present invention is illustrated. The security device of a power receptacle includes a slot cover 1, a protection cover 2, a  
25    plurality of elements 3. The slot cover 1 is installed on a wall

receptacle 10 (referring to Fig. 1) or an extension line receptacle 20 (referring to Fig. 2). The shape of the wall receptacle 10 or the extension line receptacle 20 is not confined in the present invention. A surface of the slot cover 1 is installed with at least one power slot set 11. The power slot set 11 includes at least one ground wire slot 111, a ground wire slot 112, and a grounding slot 113. In the present invention, on a surface of the power slot set 11 has at least two long recesses 12 penetrating to an interior of the receptacle (referring to Fig. 3, in Fig. 3, three slots are the illustrated). At least one recess 12 in an inner surface of the slot cover 1 is installed with a positioning block 13 at a lateral side thereof (referring to Fig. 3, in this embodiment, there are two positioning blocks 13 are illustrated). The positioning block 13 has a U shape and an interior thereof has a post 131.

The protection cover 2 (see Fig. 3) serves for isolating the sheets of the liver wire slot 111, ground wire slot 112 and grounding slot 113. The protection cover 2 can be realized by a round sheet. A surface thereof is formed with two or three via holes 21 corresponding to the liver wire slot 111, ground wire slot 112 and grounding slot 113. An inner surface thereof is formed with a plurality of recesses 12 corresponding to a plurality of hooking sheets 22 corresponding to the recesses 12 of the protection cover 2. At least one hooking sheet 22 is installed with the fixing block 221 at a lateral side thereof. The fixing block 221 may be formed as a post.

The elastic element 3 causes that the protection cover 2 to isolate the elements of the liver wire slot 111, ground wire slot 112,

and grounding slot 113 in normal condition. The element 3 can be realized by a helical compressible spring (referring to Fig. 3).

Thereby, referring to Figs. 4, 5 and 7, the hooking sheets 22 at the inner surface of the protection cover 2 are inserted into the recesses 12 of the slot cover 1. The slot cover 1 can not be guided by the recesses 12 to move linearly. The elastic elements 3 are installed between the positioning blocks 13 of the slot cover 1 and the fixing blocks 221 of the hooking sheets 22. That is, two ends of the elastic elements 3 of helical compressible spring are engaged between the post 131 and the fixing block 221 so as to resist against the protection cover 2. Normally, the protection cover 2 will seal the liver wire slot 111, ground wire slot 112, and grounding slot 113 (referring to Figs. 5 and 7). After moving the protection cover 2, the via holes 21 of the protection cover 2 will align to the liver wire slot 111, ground wire slot 112, and grounding slot 113 (referring to Figs. 6 and 9). Thereby, the security device of a power receptacle of the present invention is formed.

In use of the security device of a power receptacle of the present invention, the protection cover 2 can be elastically resisted by the elastic elements 3 normally so that the liver wire slot 111, ground wire slot 112 and grounding slot 113 are sealed. Thereby, undesired objects can not inserted into wall receptacle 10 or the extension line receptacle 20 with the slot cover 1 and thus dangerous accident can be avoided. Since normally, the protection cover 2 seals the liver wire slot 111, ground wire slot 112 and grounding slot 113, dusts or insects can not move into the

slots. The electric elements of the wall receptacle 10 or the extension line receptacle 20 can be protected so as to increase the lifetime of the wall receptacle 10 and the extension line receptacle 20.

5        In the present invention, power can be conducted to a plug inserted in the receptacle (referring to Fig. 8). The plugs 30 are inserted into the via holes 21 of the protection cover 2 and thus moves transversally so that the plugs 30 drive the protection cover 2 to move linearly. When the via holes 21 aligns to the liver wire slot 111, ground wire slot 112, and grounding slot 113, the plugs  
10       30 can be further inserted into the interior of the liver wire slot 111, ground wire slot 112 and grounding slot 113 (referring to Fig. 9) to electrically conduct to the electric elements in the wall receptacle 10 or the extension line receptacle 20 having the slot  
15       cover 1. However, when the user pull the plugs 30 out of the receptacle, the protection cover 2 is ejected by the elastic elements 3 to move to the original position to seal the liver wire slot 111, ground wire slot 112, and grounding slot 113. Therefore, a safety effect is achieved.

20       Although the present invention has been described with reference to the preferred embodiments, it will be understood that the invention is not limited to the details described thereof. Various substitutions and modifications have been suggested in the foregoing description, and others will occur to those of  
25       ordinary skill in the art. Therefore, all such substitutions and modifications are intended to be embraced within the scope of the invention as defined in the appended claims.